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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,354	02/06/2002	Joseph A. Kozlowski	AL01381K	4273

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PATENT DEPARTMENT (K-6-1, 1990)
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EXAMINER	
COPPINS, JANET L	

ART UNIT	PAPER NUMBER
1626	

MAIL DATE	DELIVERY MODE
11/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/072,354	KOZLOWSKI ET AL.	
	Examiner	Art Unit	
	Janet L. Coppins	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *61-85,87,88 and 90-129* is/are pending in the application.

4a) Of the above claim(s) *91-111 and 127* is/are withdrawn from consideration.

5)☒ Claim(s) *61-85,90,112-126,128 and 129* is/are allowed.

6)☒ Claim(s) *87 and 88* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 61-85, 87, 88, and 90-129 are now pending in the instant application.

Response to Amendment

2 Receipt is acknowledged of Applicants' Amendment and Response of September 12, 2007, which has been reviewed by the Examiner and entered of record in the file. Accordingly, claims 61, 128 and 129 have been amended. Claims 87, 88, 91-111, and 127 are currently withdrawn from consideration as drawn to non-elected inventions.

Previous Claim Rejections - 35 USC § 102

3. (a) Claim 61 in part previously rejected under 35 U.S.C. 102(b) as being anticipated by Ivanova, V. M. et al.

(b) Claim 129 in part rejected under 35 U.S.C. 102(b) as being anticipated by Malichenko, B.F. et al.

4. In view of Applicants' amendment to claim 61 in order to proviso out the anticipated subject matter, the above 35 U.S.C. 102(b) rejections are withdrawn.

Status of the Claims and Rejoinder

5. Claims 61-85, 90, 112-126, 128 and 129 are currently before the Examiner, with no pending art rejections. Claims 87, 88, 91-111 and 127, drawn to methods of use and pharmaceutical compositions containing additional ingredients, currently withdrawn from consideration by the Examiner, as stated above.

6. In accordance with MPEP 821.04 and *In re Ochiai*, rejoinder of product claims with process claims commensurate in scope with the allowed product will occur following a finding that the product claims are allowable. Therefore, since Group II (claims 86 and 89) has been

cancelled, the Examiner will rejoin Group III (claims 87 and 88, drawn to methods of treating) for examination on the merits.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 87 and 88 rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compounds of claim 61 that are cannabinoid receptor ligands, for treating various medical conditions associated with inflammation and immunomodulation, does not reasonably provide enablement for methods of treating any and all of the diseases encompassed by said claims. While certain diseases may be listed on pages 39-40 of the specification, the vast "laundry list" of diseases and conditions recited in claims 87 and 88 is not enabled. In *In re Wands*, 8 USPQ2d 1400 (1988), factors to be considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. § 112, first paragraph, have been described. They are:

1. the nature of the invention,
2. the state of the prior art,
3. the predictability or lack thereof in the art,
4. the amount of direction or guidance present,
5. the presence or absence of working examples,
6. the breadth of the claims,
7. the quantity of experimentation needed, and
8. the level of the skill in the art.

In the instant case, the aforementioned claims are directed to many diseases that are not enabled in the specification.

The nature of the invention

The nature of the invention is of methods of treating many different unrelated diseases or

conditions, comprising administering the instant claimed compound to a patient in need thereof.

The state of the prior art

It is well recognized in the medical art that treatment of diseases or symptoms are not analogous terms. Furthermore, the diseases recited within claims 87 and 88 are not the same but different diseases. For example, autoimmune diseases such as rheumatoid arthritis, scleroderma, and lupus erythematosus refers to diseases against "self," while diseases such as psoriasis, COPD, hepatitis, diabetes and asthma are not encompassed by this definition and are completely unrelated. Such as all insulin-dependent diabetes mellitus patients require administering a hyperglycemic agent, on the other hand, treating autoimmune diseases employ the use of immunosupressants. As stated, claim 87 asserts that the compound is capable of treating any/all immunomodulatory diseases. The state of the art does not teach one compound for the absolute treatment of *any* and *all* immunomodulatory diseases. The number of possible diseases embraced by this claim, i.e. autoimmune diseases such as rheumatoid arthritis, lupus, Crohn's diseases, ulcerative colitis, etc. and inflammatory diseases such as asthma, allergy, bronchitis, conjunctivitis, meningitis, etc. would impose undue experimentation on the skilled art worker. Thus any claim to the treatment of "immunomodulatory diseases," without any further limitation of the scope, is very broad and highly unpredictable given the current state of the art.

The predictability or lack thereof in the art

The immune response of a living organism is a complex, specific and interrelated process. It involves the overall coordination of all the lymphocytes, B-types, T-types, etc., their population, expression and interaction. The intertwined dependency and complexity in bio-

feedback control relationships involves enormous biological pathways and physiological homeostasis.

The nature of pharmaceutical arts is that it involves screening *in vitro* and *in vivo* to determine which compounds exhibit the desired pharmacological activities. There is no absolute predictability even in view of the seemingly high level of skill in the art. The existence of these obstacles establishes that the contemporary knowledge in the art would prevent one of ordinary skill in the art from accepting any therapeutic regimen on its face. Also, in the absence of a showing of correlation between all the diseases claimed as capable of being treated by the compound of claim 61 and the stimulation of CB_2 receptors, one of skill in the art is unable to fully predict possible results from the administration of the compound of claim 61.

The amount of direction or guidance present

The specification has enabled only the compounds according to claim 61 that compete with CP-55940 and bind to cannabinoid receptors. Furthermore, treatment of the claimed distinct diseases are normally disease or symptom oriented, thus are highly individualized, i.e. treating the symptoms of psoriasis (itchy, inflamed skin) would not employ the same methods as treating the symptoms of rheumatoid arthritis (stiffness and joint pain). The efficacy of an individual compound against a specific disease or symptom needs to be specifically and individually supported by factual evidence. Such evidence has not been described or supported by the specification.

The presence or absence of working examples

The data provided in the disclosure on binding activity towards recombinant cannabinoid receptors is insufficient evidence for methods of treating all claimed diseases. In fact, the only

disclosure in the specification at all is found on page 40, wherein an ELISA assay is described, but no data has been provided. In view of the diversified multiple diseases as claimed, such a single universal disclosure fails to provide specific description in guiding one skilled in the art to pick and choose the specific compounds that would be useful for treating one or a specific group of pathological conditions. The standard of 35 USC 112, first paragraph rejections is that the application *itself* must inform, rather than direct, others to find out for themselves, please see *In re Garnder*, 166 USPQ 138.

The breadth of the claims

Applicants are claiming methods of treating a broad number of diseases that are unrelated. Regarding "immunomodulatory diseases" of claim 87, this broad terminology is not enabled because the metes and bounds of the diseases that could be treated using the compounds found in the instant claims cannot be ascertained.

The allegation that the diseases claimed by the Applicants are all treated by stimulating cannabinoid receptor ligands is insufficient support that the claimed compounds have specific efficacy in current available form for treating all of the claimed diseases of claim 88.

The quantity of experimentation needed

The quantity of experimentation needed is undue. One of ordinary skill in the art without direction, would be unable to treat each and every unrelated disease/condition of claims 87 and 88 using the instant claimed compounds. One of skill in the art would need to determine what listed diseases would be benefited by the stimulation of cannabinoid receptors and would furthermore then have to determine whether the claimed compounds would provide treatment of all of the diseases by said stimulation.

The level of the skill in the art

The level of skill in the art is high. However, due to the unpredictability in the pharmaceutical art, it is noted that each embodiment of the invention is required to be individually assessed for physiological activity by in vitro and in vivo screening to determine which compounds exhibit the desired pharmacological activity and which diseases would benefit from this activity.

Thus, the specification fails to provide sufficient support of the broad use of the compound of the claim 61 for the treatment of all claimed diseases. As a result, necessitating one of skill to perform an exhaustive search for which claimed diseases can be treated by the compound of claim 61 in order to practice the claimed invention.

8. Claim 88 also rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In addition to the "laundry list" of diseases/conditions recited in claim 88 that are not enabled, several are not even mentioned in the specification (please refer to pages 39 and 40), e.g. sepsis, shock, sarcoidosis, idiopathic pulmonary fibrosis, bronchopulmonary dysplasia, retinal disease, scleroderma, colitis, coronary artery disease, melanoma, transplant rejection, graft versus host disease, Hashimoto's thyroiditis, Graves disease, myasthenia gravis, and Goodpasture's syndrome. Therefore, the above-mentioned sixteen diseases have not been described in the disclosure, and no examples have been provided to demonstrate possession of this breadth of invention.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 87 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim is directed to a method of using the compounds of the instant invention to treat certain diseases, including immunomodulatory diseases. This language renders the claim vague since it is unclear which diseases Applicants are intending to treat with the instantly claimed compounds. "Immunomodulatory" implies diseases that either up-regulate or down-regulate the immune system, and require one of two drugs, based on their effects: immunosuppressants or immunostimulators. However it is unclear which diseases are included or excluded by this language.

Conclusion

11. In conclusion, claims 61-85, 87, 88 and 90-129 are pending, claims 91-111 and 127 are currently withdrawn from consideration, claims 87 and 88 are rejected, and claims 61-85, 90, 112-126, 128 and 129 are currently allowable over the prior art.

Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet L. Coppins whose telephone number is 571.272.0680. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on 571.272.0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Janet L. Coppins
November 25, 2007

Joseph K. M°Kane
SPE, Art Unit 1626